

DATE: 19 August 1984 SAMPLE:
CRUISE ID: 5033 53 GTV TV Grab
LOC: VII
AREA: E

time (GMT) LAT (N) LONG (W) water depth (m) wire c
ON BOTTOM = 0751
OFF BOTTOM =

RECOVERY WEIGHT = Total 10 kg crust 5 kg

CRUST THICKNESS = Veneer to 2 cm Avg = .4 cm
Rough sooty-looking veneer (dissolution texture:
1 generation

SUBSTRATE = ~~breccia~~ - conglomerate of trachyte
clasts w/ Mn veneer, cemented w/ thick white
phosphite. Dendritic Mn in phosphite. Sparry calcite in void
COMMENTS: First GTV crust recovery!

* Microbio sample

* Confidential

53 GTV

Sample No. So 33 52 GTV : hyaloclastite

Rock Type Varied basaltic, ^{hyaloclastite} trachytic, brecciated, etc, volcanic rocks, phosphatic fragments serving as substrate (nuclei) for ferromanganese nodules

Color: Brownish-black (5YR 2/1) →

Texture: warty, knobby exteriors, like shuffles with finely nodose submill-scale surface texture

Remarks: dredge recovered from plateau or ledge on seamount side; rock fragments (angular, blocky) generally the same size (pebbles) set in calcareous (ferr. - ferri!) ooze, encrusted with ± 1 cm thick layer of Mn-oxide.

So 33 52 GTV 1 - Basalt hyaloclastite (AOB?)

So 33 52 GTV 2 - Phosphorized (~60%) Foraminiferal chalk

So 33 53 GTV I

Trachyte
Volcanogenic Breccia

Very pale orange (10YR 8/2) to moderate orange pink (10R 7/6) {kennel} & Moderate greenish-grey (10Y 7/6)

clastic

(Matrix) leucotrachyte clasts

(Cement) phosphorized? foraminiferal chalk

(grain size) quite variable;

(grain shape) (range: fine gravel to large pebbles) angular to sub rounded.

(Sorting) poorly sorted

Porosity: ± 75%.

Permeability: ± 50%.

Alteration: extensive; (matrix material has probably not been well altered since cementation into the greenish phosphorized matrix of chalk, via iron hydration, zeolitization (now white), zeolitization.

Remarks: Clasts of varying size, probably dislodged by dredging, composed of altered leucotrachyte set in superficially incrustated chalk (leucotrachyte is a subsilicic felsic effusive rock containing few, if any, dark minerals). The trachyte was probably subjected to hydrothermal alteration as it is suffused with zeolites and coarse greenish-yellow by non-iron-bearing, probably it lay exposed to sea water on the bottom for a period of time, as each clast is rimmed with (1 mm thickness) of ferromanganese oxide, and often penetrated by todorokite dendrites along fractures; perhaps these clasts represent the nuclei of first-stage manganese nodules in which growth was terminated by overgrowth in calcareous ooze; phosphorization brings inorganic → the chalk cement (perhaps also overgrowth) the breccia serves as substrate for